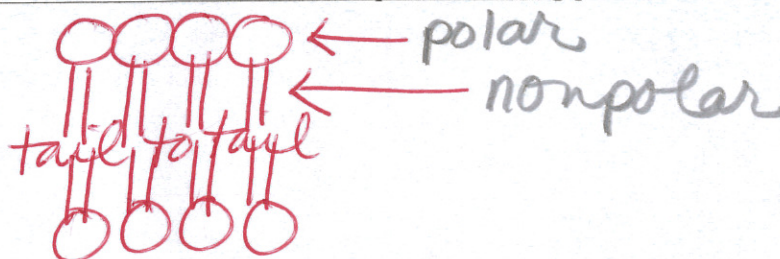


Name: _____ Period: _____

Cell Study Guide

Short Answer:

1. Cell theory – cells are units of structure and function in all living organisms; all cells come from pre-existing cells
2. Name all 8 characteristics of living things.
Grow, reproduce, use food for energy, exchange gases, respond to stimuli, made of cells, homeostasis, get rid of wastes
3. Why is surface area important?
Helps absorb needed material and give off wastes
4. How many cells do humans have? >1 trillion
5. Name 3 important facts about Leeuwenhoek.
Father of modern microscope, animalcules, 1st to observe bacteria and RBC, living creatures with similarities in structure and function
6. What did Hooke do?
Looked at cork under microscope, coined the term cell
7. How did we get the term cell?
Looking at cork, Hooke thought they looked like cells (tiny, compartmentalized rooms) that monks lived
8. What two scientists proposed the cell theory?
Schleiden and Schwann
9. Using a 9cm*9cm*9cm cube, find surface area and volume.
Surface Area = $9 \times 9 \times 6$ sides = 486 cm squared
Volume = $9 \times 9 \times 9$ = 729 cm cubed
10. Name the total magnifications of the low, high, and medium power objectives and explain how you got those numbers.
Low – $4x \times 10x = 40x$
Medium – $10x \times 10x = 100x$
High – $40x \times 10x = 400x$
11. Compare prokaryotes to eukaryotes.
Prokaryotes – lack nucleus and organelles, smaller (1-10um), basic shape, ex: bacteria
Eukaryotes – has nucleus and many organelles, larger (10-100um), wild, random shape, ex: plant/animal cells
12. Draw the cell membrane and label parts including polar and nonpolar regions.



13. Compare plant and animal cells. Plant cells – lacks lysosomes, large vacuoles, has chloroplasts, has cell wall

Matching:

- | | |
|----------------------------------------------------------------------------------------------|-----------------------------|
| A. basic unit of all life | _L___ chloroplasts |
| B. structures within the cell | _K___ vacuoles |
| C. outer protective layer of cell that provides protection and passage of materials | _N___ cytoskeleton |
| D. brain of cell | _I___ ribosomes |
| E. jelly-like fluid that holds organelles in place | _M___ lysosomes |
| F. found outside of cell membrane of plant cells only and provides strength and protection | _J___ mitochondria |
| G. complex network of membranes that moves proteins | _G___ endoplasmic reticulum |
| H. membranes that stack, package, and transport items | _H___ golgi apparatus |
| I. tiny bodies found along endoplasmic reticulum that makes proteins | _C___ cell membrane |
| J. powerhouse of cell that provides energy | _E___ cytoplasm |
| K. fluid-filled structures that store nutrients, regulate water content, and contain enzymes | _D___ nucleus |
| L. plant cell site of photosynthesis | _B___ organelles |
| M. structures used for digestion | _A___ cell |
| N. internal skeleton giving cells its shape and movement | _F___ cell wall |
| O. inside nucleus and produces ribosomes | _P___ DNA |
| P. provides unique characteristics and found within nucleus | _O___ nucleolus |